

SURREBUTTAL TESTIMONY OF

LANE KOLLEN

ON BEHALF OF

THE SOUTH CAROLINA OFFICE OF REGULATORY STAFF

DOCKET NO. 2019-226-E

IN RE: SOUTH CAROLINA ENERGY FREEDOM ACT (HOUSE BILL 3659)

PROCEEDING RELATED TO S.C. CODE ANN. SECTION 58-37-40 AND

INTEGRATED RESOURCE PLANS FOR DOMINION ENERGY SOUTH

CAROLINA, INCORPORATED

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Lane Kollen. My business address is J. Kennedy and Associates, Inc.,
570 Colonial Park Drive, Suite 305, Roswell, Georgia 30075.

Q. DID YOU PREVIOUSLY PROVIDE TESTIMONY IN THIS PROCEEDING?

A. Yes. I previously provided Direct Testimony on behalf of the South Carolina
Office of Regulatory Staff (“ORS”) on July 10, 2020. In my Direct Testimony, I describe
my role in the ORS review of the Dominion Energy South Carolina, Incorporated’s
(“DESC” or “Company”) 2020 Integrated Resource Plan (“IRP”) filing and drafting the
“Review of Dominion Energy South Carolina, Inc. 2020 Integrated Resource Plan” (the
“ORS Report”), which includes the ORS findings, conclusions, and recommendations. I
had direct responsibility for the Executive Summary, Compliance with Requirements of
Section 40, and the Resource Planning sections of the ORS Report, including the Overview
of Resource Plans (“RPs”), Summary of Resource Plan Retirements and Additions,
Evaluation of Resource Plans, Company’s Ranking of RPs Based on Various Revenue

Requirements Metrics, and Critique of Company's RP Modeling subsections within the Resource Planning section.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my Surrebuttal Testimony is to address the Company's compliance with the requirements of Section 40, as amended by Act 62, based on the Restated and Supplemented Version of Chapter II.B.5 of the Dominion Energy South Carolina, Inc. 2020 IRP ("IRP Supplement"),¹ and to respond to the Rebuttal Testimonies of Mr. Eric Bell and Mr. James Neely in support of the IRP Supplement, specifically, the Company's revisions to the costs of the new resources reflected in the revised Resource Plans ("RPs"), its modeling and evaluation of the revised RPs, and the effects on the ranking of the RPs.

Q. HAS THE COMPANY ADEQUATELY ADDRESSED THE FLAWS THAT ORS IDENTIFIED IN ITS REVIEW OF THE IRP?

A. Yes. The IRP Supplement adequately addresses and corrects the serious flaws that ORS identified in its review of the IRP and described in the ORS Report that were necessary to modify the IRP in this proceeding and has agreed to improve its IRP planning process in future IRPs, including the implementation of new modeling tools and methodologies used to develop the IRPs.

In the IRP Supplement, the Company maintained and did not change the selection of existing and new resources reflected in the eight RPs that it analyzed and reflected in the IRP as filed and subsequently amended through discovery. However, in the IRP Supplement, the Company made significant changes to the costs of the existing and new resources that are included in the eight RPs and the related sensitivities for Demand Side

¹ The IRP Supplement reflects the Company's revision of its IRP to incorporate nearly all of the ORS recommendations for immediate implementation set forth in the Report.

1 Management (“DSM”), Carbon Dioxide (“CO2”), and natural gas prices. The changes
2 affected both capital costs and operating expenses, corrected errors in its modeling, and
3 provided more extensive summaries and comparisons of the results.

4 These revisions in the IRP Supplement significantly affect the present value and
5 the levelized annual net present value of each RP and the related sensitivities, and in some
6 cases, modify the ranking of the RPs in comparison to each other.

7 **Q. WHAT IS THE LEAST COST RP AMONG THE REVISED RPS REFLECTED IN**
8 **THE IRP SUPPLEMENT?**

9 **A.** The revised RP2 is the least cost RP among the eight revised RPs in the IRP
10 Supplement, assuming low, medium, or high DSM, \$0 for CO2, and low, base or high gas.
11 It is not the least cost RP in any of the \$25 per ton CO2 sensitivities; however, there is no
12 pending legislation or EPA rulemaking that imposes CO2 taxes or other significant costs
13 on new natural gas resources beyond the costs already reflected in the eight RPs and
14 sensitivities with the \$0 CO2 assumption. The ranking of the RPs varies based on other
15 sensitivities and may change in future IRPs due to changes in actual facts and
16 circumstances, changes in assumptions, new regulations, and/or other changes in the
17 market.

18 The revised RP2 assumes that Wateree Unit 2 is repaired and returned to service.
19 It assumes that there are no early retirements of the Wateree units and that the Company
20 incurs the capital expenditures pursuant to the Effluent Limitations Guidelines (“ELG”) to
21 continue operating the units until their probable retirement dates in 2044 and 2047 for Units
22 1 and 2, respectively. The revised RP2 assumes no early retirements of the Williams,
23 Urquhart, or McMeekin units. It assumes that no new solar resources are added beyond

1 the solar purchases under contract that will be added through 2021. Finally, it assumes that
2 no other new major resources are added until 2035. The Company assumes that it will add
3 a new 523 megawatt (“MW”) natural gas-fired internal combustion turbine (“ICT”)
4 resource in that year, another new 523 MW ICT in 2044, and additional new ICTs in
5 subsequent years to maintain the 14% winter base reserve margin requirement.

6 **Q. IS ORS SATISFIED THAT THE IRP SUPPLEMENT MEETS THE SECTION**
7 **40(B)(1) AND (2) STATUTORY REQUIREMENTS?**

8 **A.** Yes, ORS is satisfied that the IRP Supplement meets the statutory requirements.
9 The ORS Report designated certain recommendations as necessary for this IRP and other
10 recommendations as necessary for future IRPs. As noted by Mr. Hayet in his Surrebuttal
11 Testimony, the Company has addressed and made nearly all the changes based on the
12 recommendations in the ORS Report necessary for this IRP. The Company also has agreed
13 to make various changes in its modeling, including the implementation of an optimization
14 model and to work with ORS and other stakeholders to improve other aspects of its IRP
15 process for future IRPs. Mr. Hayet and Mr. Baron address the changes applicable to the
16 future IRPs in their respective Surrebuttal Testimonies.

17 **Q. DOES THE REVISED RP2 COMPLY WITH THE STANDARDS SET FORTH IN**
18 **SECTION 40(C)(2)?**

19 **A.** Yes. Now that the Company incorporated the extensive list of modifications that
20 the ORS identified, the revised RP2 balances the seven factors identified in Section
21 40(C)(2), which are discussed in more detail in the ORS Report at pages 16 – 20. In
22 particular, for purposes of this IRP, the revised RP2 satisfies the Company’s resource
23 requirement needs, represents the least cost most affordable plan based on the current IRP

assumptions, complies with all known state and federal environmental regulations, maintains power supply reliability, addresses commodity price risks, includes a diverse set of generation resources, and attempts to address additional issues that the Commission may consider important and in the public interest, such as offering a flexible plan that the Company could easily modify as future conditions change. Furthermore, the least cost plan may change in future IRPs as the Company adopts and uses an optimization model, continues to improve its IRP process, and as circumstances, methodologies, and assumptions change.

Q. IN THE ORS REPORT, ORS RECOMMENDS THAT THE COMPANY REVIEW ITS ASSUMPTIONS REGARDING LONG-TERM CONTINUING CAPITAL COST DE-ESCALATION OF RENEWABLE ENERGY PROJECTS.² DID THE COMPANY REVISE THE ESCALATION OF THE NEW RENEWABLE RESOURCES CAPITAL COSTS?

A. Yes. The Company determined that the National Renewable Energy Laboratory (“NREL”) costs were stated in real dollars, not nominal dollars as the Company initially assumed. Thus, it was not necessary for the Company to de-escalate the NREL costs. The Company then determined separate escalation factors for the new solar and battery resources for two separate time periods, the first from 2020 through 2030 and the second from 2031 through 2050. These changes were reflected in the revenue requirement analyses and increased the cost of the new battery resources in several of the RPs.³

Q. IN THE ORS REPORT, ORS RECOMMENDS THAT THE COMPANY INCLUDE CAPITALIZED INTEREST (“AFUDC”) IN COST OF THE NEW RESOURCES

² Recommendation 13 in the Report.

³ Rebuttal Testimony of James Neely at 7-8.

**USED IN ITS REVENUE REQUIREMENT MODELING.⁴ DESCRIBE THE
COMPANY'S RESPONSE.**

A. The Company included AFUDC on the new 1x1 combined cycle ("CC"), 2x ICT, and 2x ICT (aero) resource capital expenditures during construction, but did not include AFUDC on the new solar and battery resources.⁵ The Company calculated AFUDC using a 3.76% cost of capital that includes lower cost short-term debt on the basis that this follows the FERC AFUDC methodology. The Company's weighted cost of capital that it used to calculate the revenue requirement and the discount rate was 8.5% before gross-up for income taxes.

**Q. ARE THERE STILL FLAWS WITH THE COMPANY'S AFUDC
CALCULATIONS?**

A. Yes, although correction of the flaws does not change the selection of revised RP2 as the least cost RP. The Company should have included AFUDC on the new solar resources given the multi-year construction period for those resources. The Company also should have included AFUDC on the new battery resources to the extent that there is a multi-month construction period unless the resources will be acquired under a build-own-transfer or similar turnkey type of transaction structure whereby the vendor finances the construction cost during the construction period and then sells the resource to the Company upon completion.

Although the Company should have included AFUDC on the new solar and battery resources, it would not have an effect on the selection of revised RP2 as the least cost RP

⁴ Recommendation 23(b) in the Report.

⁵ Rebuttal Testimony of James Neely at 15-16.

1 and would have raised the cost of the RPs with new solar and battery resources by an
2 immaterial amount.

3 In addition, the Company should have used its weighted cost of capital as the
4 AFUDC rate on the basis that it actually will finance the construction costs of new
5 resources at its incremental cost of capital. This also is necessary to ensure consistency
6 between the financing cost assumptions used for AFUDC, the return on rate base in the
7 revenue requirement and the discount rate used to calculate the levelized present value of
8 the revenue requirements.

9 Although the Company's calculations understate the AFUDC on all new resources
10 to which it was applied, correction of the AFUDC would affect new CC resources more
11 than any of the other new resources due to the much larger capital cost of the CC resource
12 compared to the others. It does not affect the selection of revised RP2 as the least cost RP.

13 Further, the Company assumed that the AFUDC was included in the tax cost (basis)
14 used for tax depreciation, although the Internal Revenue Code requires that interest be
15 capitalized during construction and added to the tax cost, not AFUDC. In future IRPs, the
16 Company should add AFUDC to the book cost and capitalized interest to the tax cost.

17 Although the Company's calculations overstate the tax cost, tax depreciation, and
18 accumulated deferred income taxes ("ADIT"), the affect is not sufficiently material that it
19 would affect the selection of the revised RP2 as the least cost RP.

20 **Q. IN THE ORS REPORT, ORS RECOMMENDS THAT THE COMPANY**
21 **CORRECT VARIOUS ERRORS IN THE DE-ESCALATION AND ESCALATION**

**OF THE CAPITAL COSTS OF NEW RESOURCES.⁶ HAS THE COMPANY
CORRECTED THESE ERRORS?**

A. Yes.⁷

**Q. IN THE ORS REPORT, ORS RECOMMENDS THAT THE COMPANY INCLUDE
CAPITAL EXPENDITURES/PLANT ADDITIONS FOR EXISTING RESOURCES
AND NEW RESOURCES AFTER COMMERCIAL OPERATION, WITH THE
SOLE EXCEPTION OF THE WATEREE AND WILLIAMS ELG CAPITAL
EXPENDITURES/PLANT ADDITIONS.⁸ HAS THE COMPANY INCLUDED
THESE CAPITAL EXPENDITURES/PLANT ADDITIONS FOR EXISTING
RESOURCES AND NEW RESOURCES AFTER COMMERCIAL OPERATION?**

A. Yes.⁹ The Company included the present value of future capital expenditures/plant additions in the total revenue requirement and the levelized present value for each RP. The Company did not calculate Modified Accelerated Cost Recovery System (“MACRS”) depreciation, ADIT, or property tax expense on these capital expenditures/plant additions. The Company’s methodology should be refined in subsequent IRPs, although it does not affect the selection of the revised RP2 as the least cost IRP.

**Q. IN THE ORS REPORT, ORS RECOMMENDS THAT THE COMPANY RETIRE
AND REPLACE EACH NEW BATTERY ENERGY STORAGE SYSTEM (“BESS”) AFTER ITS ASSUMED TEN-YEAR OPERATING LIFE.¹⁰ DESCRIBE THE
COMPANY’S RESPONSE.**

⁶ Recommendation 23(c) in the Report.

⁷ Rebuttal Testimony of James Neely at 16.

⁸ Recommendation 23(d) in the Report.

⁹ Rebuttal Testimony of James Neely at 16-17.

¹⁰ Recommendation 23(e) in the Report.

1 A. The Company found that new BESS resources require cell augmentation at
2 approximately 20% every seven years. The Company added fixed O&M expense
3 equivalent to 3% of the cost of the new BESS resources each year.¹¹

4 **Q. IS THIS REASONABLE?**

5 A. Yes, but only to the extent that it reflects the reality of the BESS resources. The
6 Company should continue to research this issue before it makes any BESS resource
7 commitments.

8 **Q. IN THE ORS REPORT, ORS RECOMMENDS THAT THE COMPANY SHOULD**
9 **PROPERLY INCORPORATE THE INVESTMENT TAX CREDIT INTO THE**
10 **COST OF NEW OWNED SOLAR AND BESS RESOURCES.¹² DESCRIBE THE**
11 **COMPANY'S RESPONSE.**

12 A. The Company increased the MACRS depreciation rates in the first year to reflect
13 the utilization of the investment tax credit ("ITC") and reduced the MACRS depreciation
14 rates in all subsequent years.¹³ In effect, the Company assumed that the ITC is equivalent
15 to bonus tax depreciation.

16 **Q. IS THIS CORRECT?**

17 A. No. It overstates the capital cost of the new solar and BESS resources. The ITC is
18 a credit or reduction to income tax expense. Unlike MACRS or bonus depreciation, the
19 ITC is not a deduction against taxable income. The treatment of the ITC as bonus tax
20 depreciation incorrectly reduces the value of the ITC by approximately 75%.

¹¹ Rebuttal Testimony of James Neely at 17.

¹² Recommendation 23(f) in the Report.

¹³ Rebuttal Testimony of James Neely at 18.

Although the Company did not correctly model the ITC, it did not affect the selection of the revised RP2 as the least cost RP. Further, the ITC issue affects only the RPs that include new solar and BESS resources.

Q. IN THE ORS REPORT, ORS RECOMMENDS THAT THE COMPANY INCLUDE DISMANTLEMENT COSTS, SITE RESTORATION COSTS, AND INCREMENTAL TRANSMISSION COSTS NECESSARY FOR POST-RETIREMENT VOLTAGE SUPPORT FOR EXISTING RESOURCES, PARTICULARLY RESOURCES STUDIED FOR POSSIBLE EARLY RETIREMENT.¹⁴ DESCRIBE THE COMPANY'S RESPONSE.

A. The Company does not agree with this recommendation. The Company asserts that the depreciation rates include dismantlement and site restoration costs. It also asserts that it is necessary to perform site specific assessments of incremental transmission investment costs necessary to maintain voltage support for retirements of existing resources.

Q. PLEASE RESPOND.

A. The Company is correct that the depreciation rates applicable to existing resources include dismantlement and site restoration costs, although depreciation expense on the plant costs of existing resources is not reflected in the IRP. However, the Company is not correct on the depreciation rates applicable to the new resources reflected in the IRP. Those depreciation rates do not include any dismantlement or site restoration costs. The depreciation rates on the new resources are simply 1 divided by the service life of the resource.

¹⁴ Recommendation 23(g) in the Report.

1 It is likely, at least for certain existing resources and for new resources retired
2 within the IRP study period, that incremental transmission investment costs will be
3 necessary to maintain voltage support after those resources are retired. Neither the
4 depreciation rates applicable to existing resources nor the depreciation rates applicable to
5 new resources include incremental transmission investment costs.

6 These additional costs could be material and should be addressed in future
7 retirement studies and in future IRPs. These issues also should be discussed with
8 stakeholders in conjunction with future IRPs.

9 **Q. IN THE ORS REPORT, ORS RECOMMENDS THAT THE COMPANY SHOULD**
10 **USE THE CORRECT DEPRECIABLE LIFE ASSUMPTION FOR WATEREE**
11 **ELG CAPITAL EXPENDITURES/PLANT ADDITIONS.¹⁵ DESCRIBE THE**
12 **COMPANY'S RESPONSE.**

13 **A.** The Company agrees and corrected this error.¹⁶

14 **Q. IN THE ORS REPORT, ORS RECOMMENDS THAT THE COMPANY SHOULD**
15 **CONDUCT A DETAILED RETIREMENT STUDY USING CORRECTED**
16 **MODELING ASSUMPTIONS AND ADDRESS ALL POTENTIAL EARLY**
17 **RETIREMENT CANDIDATES.¹⁷ DESCRIBE THE COMPANY'S RESPONSE.**

18 **A.** The Company plans to conduct detailed planning studies in future years, but does
19 not believe that such studies are necessary at this time or that it can complete such studies
20 prior to the 2021 IRP. The Company states that it may perform such studies for the 2022
21 IRP.¹⁸

¹⁵ Recommendation 23(h) in the Report.

¹⁶ Rebuttal Testimony of James Neely at 20-21.

¹⁷ Recommendation 10 in the Report.

¹⁸ Rebuttal Testimony of Eric Bell at 21-23.

1 **Q. PLEASE RESPOND.**

2 **A.** The ORS recommendation to perform detailed retirement studies was directed
3 toward future IRPs. The Company should make every reasonable effort to complete these
4 studies and include the results in the 2021 IRP.

5 **Q. WILL YOU UPDATE YOUR SURREBUTTAL TESTIMONY BASED ON**
6 **INFORMATION THAT BECOMES AVAILABLE?**

7 **A.** Yes. ORS fully reserves the right to revise its recommendations via supplemental
8 testimony should new information not previously provided by the Company, or other
9 sources, becomes available.

10 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

11 **A.** Yes.